Prof. Jules Walsch, Poitiers; and Prof. Webster, Worcester, Mass.

The University of St. Andrews will confer, on September 6, the honorary degree of LL.D. on the following guests of the association:—Prof. Charles Barrois, professor of geology in the University of Lille, the *doyen* of French geologists, and author of many well-known publications on the igneous and metamorphic rocks of Brittany; Prof. Fano, professor of physiology in the University of Florence, and editor of the *Archivio di Fisiologia*; Prof. E. Gley, professor of physiology in the Collège de France, and one of the editors of the *Journal de Physiologie et de Pathologie générale*; M. Yves Guyot, of Paris, the well-known writer on political and economic science, editor of the *Journal des Économistes*; Prof. H. J. Hamburger, professor of physiology in the University of Gröningen, distinguished for his researches on osmotic phenomena in relation to physiology, and for his studies of chemotaxis, phagocytosis, and absorption; Prof. Paul Heger, emeritus professor of physiology in the University of Brussels; Prof. Charles Julin, professor of zoology in the University of Liège, who is especially known for his many important investigations into the anatomy and embryology of the Ascidians; Prof. H. Jungersen, professor of zoology in the University of Copenhagen, and director of the Museum of Zoology, a leading authority on the comparative anatomy and classification of fishes; Prof. H. Kayser, professor of physics in the University of Bonn, the eminent authority on spectroscopy; Prof. A. Kossel, professor of physiology in the University of Heidelberg, and editor of the "Handbuch der Physiologischen Chemie"; Prof. Franz Keibel, professor of comparative embryology in the University of Freiburg; Prof. F. Lindemann, of Munich, the distinguished mathematician and philosopher; Prof. S. J. Meltzer, professor of physiology and pharmacology in the Rockefeller Institute, New York, and president of the American Physiological Society; Prof. Hans Meyer, professor of pharmacology in the University of Vienna, well known for his many writings on experimental pharmacology, and especially on the theory of narcosis; Dr. C. G. J. Petersen, of Copenhagen, a leading authority in all matters connected with the economic treatment and scientific study of fishery questions; Prof. Max Verworn, of Bonn, editor of the "Handbuch für Allgemeine Physiologie," and celebrated for his very numerous writings, both experimental and philosophical, on physiological and psychological subjects.

NOTES.

We regret to have to record the death of Prof. Forel, which, according to a Reuter message, took place at Morges on August 7, at seventy-one years of age.

We regret to notice the announcement of the death, at the age of fifty-nine years, of M. Lucien Lévy, president of the Mathematical Society of France in 1911.

The death is announced, at the age of eighty-three years, of Dr. T. L. Rogers, who, in 1883, was president of the psychological section of the meeting at Liverpool of the British Medical Association, and also was one of the promoters of the work of organising the London School of Tropical Medicine.

We notice with regret the announcement of the death, on August 7, in Tenerife, of Mr. R. H. M. Bosanquet, F.R.S., at seventy-one years of age. Mr. Bosanquet was elected a fellow of the Royal Society in 1890 for his work in various departments of physics—chiefly acoustics, light, and magnetism.

At the annual meeting of the German Geological Society, held at Greifswald on August 8, a Palæontological Society was founded. The organ of the new society, the *Palaeontologische Zeitschrift,* will be published by the house of Gebrüder Borntraeger, Berlin.

We learn from the *Revue Scientifique* that the late M. Osmond, the metallurgist, whose death was announced recently (see Nature, July 4), bequeathed 4000*l.* to the Société de Secours des Amis der Sciences and 4000*l.* to the Société d'Encouragement pour l'industrie nationale.

An exhibition (which will remain open for twelve months) of appliances, fittings, materials, and products relating to sanatoria, tuberculosis dispensaries, and the treatment of tuberculosis will be opened on August 26 at the offices of the Society of Medical Officers of Health, 1 Upper Montague Street, Russell Square, W.C.

A Bill for the control of messages by wireless telegraphy has been passed by the United States House of Representatives, and is now to go to the President. The measure prescribes heavy penalties for interference with messages on the high seas, gives the Government control over inter-State wireless communication, and authorises the President to commandeer wireless stations in time of war.

A Reuter message from Constantinople states that an earthquake shock, lasting at least ten seconds, was felt there at 3.35 a.m. on August 9. The earthquake appears to have been more severely felt on the southern shores of the Sea of Marmora than in Constantinople. The centre of the disturbance seems to have been the region of the Dardanelles. It is reported that there is scarcely a building at Gallipoli or Tchanak which is undamaged, and that many people have been killed or injured.

The Departmental Committee on Boats and Davits appointed by the President of the Board of Trade to report as to the most efficient method of stowing, launching, and propelling ships' boats, will be glad if inventors and others who desire to submit inventions or schemes for their consideration will do so by October 1, 1912.

The seventy-third exhibition of the Royal Cornwall Polytechnic Society will be held at the Polytechnic Hall, Falmouth, Cornwall, on August 27–31 inclusive. Medals and prizes are offered in various departments, including fine arts, photography, mechanics, electrical appliances, ornamental art, natural history, mineralogy and chemistry, &c. Entries may be sent up to August 20. All communications should be addressed to Mr. E. W. Newton, secretary of the society, Camborne, Cornwall.

By the death, on July 16, of Alfred Fouillée, in his seventy-fifth year, a psychologist of much originality and independence of judgment passed from us. Subsequent psychological investigation has been influenced in no small measure by the point of view which Fouillée worked out in his principal work, published in 1893, "La Psychologie des idées-forces"—the view, namely, that mental evolution proceeds by the interplay of ultimate or primordial *idées-forces*. An *idée-force*, as he conceived it, was a process at once sensory, emotional, and appetitive; the force inherent in all states of consciousness had, so he maintained, its essential ground in the inseparable union of discernment, which was the source of intelligence, and preference, which was the source of will. He emphasised the intimate connection of sensation with motor and appetitive factors, and used this principle as a key to some of the leading problems of psychology. His treatment of feeling-tone, of memory and its relation to conation and movement, of the perception of time, and of the growth of volition, is particularly penetrative and suggestive. Fouillée applied the conception of *idées-forces* to the philosophy of history and of law, and to the solution of ethical and sociological questions; and also made it the basis of a metaphysical monism, according to which mechanical movements are regarded as inseparable from ideas.

IN part ii., vol. i., of *The Journal of Roman Studies* Prof. F. Haverfield contributes a valuable paper on Roman London. He remarks on Sir L. Gomme's recent work, "The Making of London," that "although it appears under the authority of a University Press," he is unable to accept many statements contained in it, such as the reference to various Celtic dwellings, to the *territorium* and *pomerium* of Roman London, and the derivation of the name Londinium. He thus sums up his conclusions regarding an original Celtic city:—"Either there was no pre-Roman London, or it was a small and undeveloped settlement, which may have been on the south bank of the Thames." Again, he dismisses the suggestion made by other writers that the Roman roads did not enter London and leave it again, but ran across to the south of it. The life of London, he believes, began very quickly after the Roman conquest; its first phase was an unwalled town situated in the eastern part of what we now call the City, and by A.D. 61 it had become important. But we know little of it, the plan of its streets, or its public buildings. It doubtless fell with other Roman cities in some unrecorded attack in the early fifth century, and lay waste for a hundred years or more.

The Eugenics Review is issued quarterly by the Eugenics Education Society; it contains a record of their proceedings and a general guide to their publications and to events which might be of interest to students of the subject. Among the contents of the July number is much that would appeal to a wider public. We would direct special attention to Mr. Cyril Burt's paper on the inheritance of mental characters. Mr. Burt's training has been that of physiologist and experimental psychologist, and, approaching the subject in the latter capacity, he has furnished from his own researches evidence which escapes some of the objections made to that previously brought forward. Among the objections referred to are these: that native ability has been judged either by measuring faculties which depend, at any rate partly, and according to some schools, wholly, on education, or by considering professional success which is due largely to family influence and opportunity; thus the resemblance between the performances of different members of a family may be due to causes other than heredity. The experimental psychologist has devised tests of qualities which "do not depend to an appreciable degree on acquired skill and knowledge," and has thus measured mental capacity directly and not by estimating mental contents. The evidence of heredity obtained by these means is not as yet very complete; it is presented by the author in the paper under review in a frank and unassuming manner, and considered in conjunction with the results obtained previously by statistical methods or by reasoning from known mental characters of different races.

WE have received from Mr. B. G. Teubner, of Leipzig, the first part of the *Zentralblatt für Zoologie, allgemeine und experimentelle Biologie,* published by his firm. This periodical is an amalgamation of the *Zoologisches Zentralblatt* and the *Zentralblatt für allgemeine und experimentelle Biologie*. It contains classified reviews and abstracts of current biological and zoological literature, and will doubtless prove almost indispensable to working zoologists and biologists. The multiplication of biological journals has been so rapid of late years that we cannot but welcome a diminution in their number by such an amalgamation as this.

MR. H. W. KEW has favoured us with a copy of a paper from the Zoological Society's Proceedings of the current year on the pairing of false-scorpions of the subgenera Chelifer and Chernes. In both the male is destitute of an intromittent organ, and fertilisation is effected by the two sexes facing one another in walking posture, when the male grasps with one or both hands (according to the subgenus) the corresponding organs or organ of the female. The male next extrudes a spermatophore, which stands erect or obliquely on the surface supporting the creatures, and then retires backwards while the female advances until the spermatophore comes below her genital aperture, into which it is immediately received.

ACCORDING to the first part of vol. xii. of *The Museums Journal,* the Museums Association is in a flourishing condition, both as regards finance and membership. Discounting certain extraordinary expenditure, the balance-sheet shows a surplus, while the list of members has increased by six during the past year. In a lecture reported in the same issue, Dr. W. E. Hoyle gives some useful hints on museums, from the point of view of both the curator and the visitor. He specially insists on the limitation of scope in the exhibits, and of the prime importance of illustrating local subjects, particularly the history and rise of culture.

To vol. ii., pt. 4, of the Journal of the East Africa and Uganda Natural History Society Mr. R. J. Cunninghame contributes an account of Mr. Le Petit's experiences of the "water-elephant" of the Congo lakes derived from the explorer himself. Although many naturalists regard the "water-elephant" as nothing more than the dwarf Congo elephant, Mr. Cuninghame accepts the view that it represents an altogether distinct type. A very similar account was received from Mr. Le Petit about a year ago by he writer of the present note, who, in consequence of a communication from Paris, did not consider it desirable that it should be published. In the same issue Mr. G. Williams records that a few years ago he saw at early dawn on the Uasingishu a large and apparently unknown animal which he compares to a bear—a comparison borne out by the Nandi, who assert that they are well acquainted with the creature, for which they have a name. Mr. Williams, who is confident that it is neither an ant-bear nor a baboon, adds that the animal has recently been seen again, and that he has heard of one which was burnt in a hut by natives, and of the skin of a second in the Kabras district, although he did not succeed in seeing it.

MR. CHUNG YU WANG, of Wuchow, author of the work on antimony in Griffin's Metallurgical Series, has drawn up a "Bibliography of the Mineral Wealth and Geology of China" (C. Griffin and Co., Ltd., 1912, price 3s. net.) The references are divided under the headings of coal, iron, gold and silver, minerals in general, mining and metallurgy in general, geology, petrology, and palæontology; hence the work will be useful to geologists, as well as to those intent on developing the resources of the Chinese Empire. On p. 32, the author remarks that the best book on the mineral wealth of China is one of which he gives the name in Chinese characters, published, with an atlas, in 1907. Perhaps we may look forward to a translation at no distant date.

THE current Annual Report of the Board of Scientific Advice for India, recently received, contains an account of the investigational work done by the various scientific departments during the year 1910–11, and also the programme mapped out for 1911–12. The departments concerned are those of applied chemistry, astronomy, botany, forestry, geodesy, geology, veterinary science, and zoology. One of the chief investigations now being carried on is in reference to the improvement of the cotton crop; to this a large amount of attention is being devoted by the agricultural staff. Simple selection is not considered likely to be of much service in obtaining the required type of plant, but practical results are expected from hybridisation. The methods adopted, and the ideas underlying the work, are of more than local interest; an account of them has been published in *The Journal of Genetics,* and an abstract in the Proceedings of the Royal Society. Among other researches in progress may be mentioned one upon the production of new wheats of high quality, which are giving very promising results; also one having for its object the improvement of the saltpetre industry by modifying the refining processes. The report shows that much solid, useful work is being accomplished.

IN a paper published in 1911 at Helsingfors, entitled "Tid vattnen i Östersjön och Finska Viken," with a short German summary, Mr. Rolf Witting discusses the tides of the Baltic Sea and of the Gulf of Finland. The tides of these seas are small, and have but little importance for sailors, so that the interest of this paper is purely scientific. Mr. Witting used Sir George Darwin's apparatus for making the tidal reductions, and he gives the tidal constants for Kronstadt, Helsingfors, Reval, Hangö, Landsort, Libau, Karlskrona, Ratan, Draghällan, Björn, and Yttergrund. He also makes use of Dr. Crone's reductions for eight Danish ports, and others by Dr. Schweydar for eight German ones. This considerable amount of material is ably discussed by the author. Perhaps the most remarkable result is that while at the Danish end the semi-diurnal tides are predominant, in the Baltic the tide becomes almost purely diurnal. He explains this by showing that the Baltic ports are near nodes of the semi-diurnal oscillation of the sea. The author also discusses seiches, according to the principles of Chrystal, and finds a period for the longitudinal seiche of about eighteen hours. The transversal seiches differ much at various transverse sections, having periods which lie between three and seven hours. The paper appears to be thorough and scientific, and is thus a valuable monograph on the subject.

OWING to the large amount of cartilage in which they are embedded, it is practically impossible to exhibit the true relations to one another of the bones of the cetacean carpus in macerated skeletons. Some months ago, when a shoal of black-fish was stranded at Mount's Bay, the paddles of a specimen were procured for the Natural History Museum, and, by dissecting away the integuments and muscles from one side of each, moulds were obtained of the bones and cartilages, from which plaster casts were afterwards taken. These casts, coloured to nature, are now exhibited in the Whale Room. During the present summer a taxidermist from the museum was despatched to the Shetlands for the purpose of obtaining flippers of the larger fin-whales; these have been treated in the same manner, the cast of one of the specimens being already completed and coloured. This new mode of exhibiting the structure of the paddle cannot be surpassed.

WE have received a copy of a report by Mr. Merritt Cary on a biological survey of Colorado, forming No. 33 of "The North American Fauna," which was published in August, 1911. An excellent coloured map exhibits the complex life-zones, which show that Colorado, like other areas with varied climatic and physiographical conditions, possesses a correspondingly large and varied fauna and flora. The main features brought out by the survey are: first, the division of the State into three topographic regions, namely the eastern plains, the central system of the Rocky Mountains, and the rugged area of alternating plateaus and valleys on the western slope; and, secondly, the subdivision of each of these regions by diverse physical and climatic conditions into small and irregular faunal and floral areas. Lists of some of the characteristic animals and plants of the various zones are given, as well as a complete list of the mammals of the country.

THE Weekly Weather Report issued by the Meteorological Office, which contains a summary of the temperature, rainfall, and duration of bright sunshine for the several districts of the United Kingdom, shows that the mean temperature for the first eight weeks of summer is generally slightly in excess of the average. The rainfall is also in excess of the normal, the greatest excess being 4·31 in. in the south of Ireland and 3·64 in. in the north-east of England, whilst the north of Scotland is the only district with a deficiency. The duration of bright sunshine for the first two months of summer is everywhere deficient, and in the north-eastern districts the deficiency is very large.

THE Greenwich observations for July give the mean temperature 65°, the mean day readings being 75°, and the mean night readings 55°. This is rather more than 1° in excess of the average, the minima being slightly more in excess of the average than the maxima. The maxima, or day temperatures, ranged from 90° on July 12 to 58° on July 19, and the night minima from 63° to 48°. There were ten days during the month with the shade temperature above 80°, whilst in the corresponding month last year there were nineteen days above 80° There were three days with the thermometer in the sun's rays at 150°, and in July last year there were eight days above 150°. Rain fell on eleven days, yielding 1·25 in., which is rather more than one-half the average amount; the heaviest fall in twenty-four hours was 0·30 in. on July 2. The sun was shining for 164 hours, which is 72 hours fewer than the average, and is less than one-half of the duration of sunshine in July last year.

DR. W. E. BRITTAN contributes to *The Popular Science Monthly* for July an article on the house-fly and certain other insects which spread diseases. Such insects may be divided into two classes: mechanical carriers, including the house-fly, and essential hosts, such as the mosquito. Rats and fleas are also considered, and the author describes the remedial measures required for checking both types of pests.

THE July number of *The Co-Partnership Journal* of the South Metropolitan Gas Company contains an illustration of the upper surface of the reflector of a street gas lamp which is completely filled by no fewer than four nests of titmice, each with two or more eggs. The structure forcibly recalls a collector's cabinet of nests, and the occurrence is probably altogether unprecedented.

THE June number of *Terrestrial Magnetism and Atmospheric Electricity* contains five tables of magnetic declinations, determined by the *Carnegie* at several hundred positions in the Atlantic during her voyages from New York to Porto Rico, Para, Rio, Buenos Ayres, and Cape Town, in 1910–11. The corrections to the declinations as recorded in the British, German, and United States charts of the Atlantic are also given, and it may be noted that these corrections generally exceed 0·5°, and often exceed 2°.

DR. J. R. ASHWORTH announces, in a letter which appears in *The Electrician* for August 2, that he finds the constant P of Frölich's equation for the magnetisation of iron is inversely proportional to the absolute temperature up to 700° C. If H is the magnetising field and I the fraction the magnetisation produced is of the maximum magnetisation, Frölich's equation runs $H = PI/(1-I)$, and is only intended to apply to cases in which hysteresis is suppressed. As P is the value of the magnetising field at which the magnetisation reaches half its maximum value, Dr. Ashworth's result is more conveniently expressed by the statement that the field for half the maximum magnetisation is inversely as the absolute temperature of the specimen.

PROF. P. C. RÂY has added to his success in preparing ammonium nitrite in tangible form a further accomplishment in determining the vapour density of this very fugitive salt. The salt was vaporised in a Hofmann tube at temperatures ranging from 66° to 100°, and had an average density of 33·5 as compared with the value 32 calculated for the NH_4NO_2. During the heating a large part of the salt was decomposed according to the equations

$$NH_4NO_2 \rightarrow N_2 + 2H_2O \text{ and}$$
$$3NH_4NO_2 \rightarrow NH_4NO_3 + 2NO + 2NH_3 + H_2O,$$

but this effect was measured and allowed for. The experiments are described in full in the July issue of the Chemical Society's Journal.

The Builder for August 9 contains an article dealing with the recent celluloid fire at Moor Lane, E.C., the inquiry into which has now been finished. The following are some of the suggestions made for handling celluloid, which ought to rank second only to absolutely explosive materials and petrol. Storage of the material in bulk should not be permitted in work-rooms; new buildings for stores or workshops should be of fire-resisting materials; the timber parts of old buildings should be plastered; celluloid would be best dealt with in buildings remote from towns; ample gangways should be arranged in workshops; and waste and cuttings of celluloid should be cleared away frequently from the floor. Our contemporary deprecates any panic legislation, but would like to see the duty of examining and pronouncing upon plans of such factories in London placed in the hands of men possessing wide general experience of building and surveying matters, as well as having knowledge of fire and its behaviour under varying conditions.

OUR ASTRONOMICAL COLUMN.

PHOTOGRAPHIC OBSERVATIONS OF COMET 1911*c* (BROOKS).—Ten excellent photographs of comet 1911*c* are reproduced, and, with many others, described by Prof. Barnard in No. 1, vol. xxxvi of the *Astrophysical Journal*. Prof. Barnard directs attention to the lack of details and variation in the tail of this comet up till about the middle of October, 1911; although it was a fairly bright object visually, it was very weak photographically, being essentially different from Morehouse's comet in this respect. But later the comet became exceedingly active, and Prof. Barnard's photographs show some most interesting changes in the structure of the tail, which, on his smaller-scale plates, extends to a distance of 17°. A remarkable reduction in the size of the head on the comet's approach to